The opinion in support of the decision being entered today was ***not*** written for publication and is ***not*** binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENZABURO SUZUKI

Appeal No. 1997-1766
Application No. 08/245,033

HEARD: November 29, 2000

Before FLEMING, RUGGIERO and BARRY, ***Administrative Patent Judges.***

FLEMING, ***Administrative Patent Judge.***

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1, 4, 7, 8, 12, 13 and 20. Claims 2, 3, 5, 6, 9 through 11 and 15 through 17 were objected to as being dependent upon a rejected base claim, but are indicated as being allowable by the Examiner if written in independent form

including all the limitations of the base claim and any intervening claims. Appellant has cancelled these claims and has placed these claims in a divisional application (Serial No. 08/573,409). Claims 14, 18 and 19 have been cancelled. In the Examiner's answer, dated December 11, 1996, the Examiner has withdrawn the rejection of claims 12 and 13. Therefore, we have before us claims 1, 4, 7, 8 and 20.

The invention relates to a zoom lens system having five groups of lenses which function to prevent image shake. On page 7 of the specification, Appellant discloses that in zoom lenses having five groups, the displacement means 1 shown in Figure 1 for effecting vibration reduction is provided in the second lens unit.

Independent claim 1 is reproduced as follows:

1. A zoom lens system with vibration reduction function including, in succession from an object side:

a first lens unit having positive refractive power;

a second lens unit movable along a direction across an optical axis thereof and having negative refractive power;

a third lens unit;

a fourth lens unit having positive refractive power;

a fifth lens unit having negative refractive power;

during focal-length change from the wide angle end to the telephoto end, spacing between said first lens unit and said second lens unit being increased, spacing between said second lens unit and said third lens unit being varied, and spacing between said fourth lens unit and said fifth lens unit being decreased; and

a vibration reduction device for moving said second lens unit in the direction across said optical axis;

stabilization of an image on an image plane being accomplished by the movement of said second lens unit caused by said vibration reduction device.

The Examiner relies on the following references:

Kitagishi et al. (Kitagishi '602)	4,844,602	July 4, 1989
Kitagishi et al. (Kitagishi '868)	4,907,868	Mar. 13, 1990
Yamazaki et al. (Yamazaki)	4,974,950	Dec. 4, 1990
Ogawa et al. (Ogawa)	5,042,927	Aug. 27, 1991
Maruyama	5,121,978	June 16, 1992
Ishii et al. (Ishii) (Japanese patent application)	5-113,538	May 7, 1993
Hamano (Japanese patent application)	4-301,811	Oct. 26, 1992

Claims 1, 8 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Ogawa in view of Yamazaki. Claims 1, 4, 7 and 20 stand rejected under 35 U.S.C. § 103 as being unpatent-able over Ishii in view of Kitagishi '602. In addition, the Examiner set forth a new ground of rejection in the Examiner's answer. Thus, claims 1, 4, 8 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over

Ogawa in view of Kitagishi '602, Yamazaki and Maruyama. Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over Ogawa in view of Kitagishi '602, Yamazaki, Maruyama and Kitagishi '868.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the briefs[1] and answers[2] for the respective details thereof.

OPINION

We will not sustain the rejection of claims 1, 4, 7, 8 and 20 under 35 U.S.C. § 103.

The Examiner has failed to set forth a ***prima facie*** case. It is the burden of the Examiner to establish why one having

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[1] Appellant filed an appeal brief on September 12, 1996. Appellant filed a reply brief in response to the new ground of rejection set forth in the Examiner's answer on February 11, 1997. The Examiner enters this reply brief and responded with an Examiner's answer on May 8, 2000. Appellant filed a second reply brief on July 10, 2000. On August 11, 2000, the Examiner mailed an office communication stating that the second reply brief has been considered but no further response by the Examiner is deemed necessary.

[2] The Examiner filed an Examiner's answer with a new ground of rejection on December 11, 1996. In response to Appellant's reply brief responding to the new ground of rejection, the Examiner filed a supplemental Examiner's answer on May 8, 2000.

ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. ***In re Sernaker***, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996) ***citing W. L. Gore & Assoc., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied,*** 469 U.S. 851 (1984).

In Appellant's appeal brief, reply brief and second reply brief, Appellant argues that it would not have been obvious to those skilled in the art to combine the image stabilization teachings of the secondary references with the five-unit nonstabilizing zoom lenses of Ogawa or Ishii. Appellant argues that the Examiner continues to ignore the complexity and unpredictability of zoom lens construction with image stabilization. Appellant argues that designing a multi-

element lens, such as a zoom lens or a fixed focal length telephoto lens, is a difficult, complex matter, requiring designing a lens unit so as to provide appropriate refractive power while controlling various types of aberration in order to attain a high level of optical performance. Appellant points out that in zoom lenses, relative movement of the lens unit during zooming creates serious aberration and aberration variation problems that do not occur in fixed focal length lenses, and that these problems must be solved if a high level of optical performance is to be attained. Appellant points out that unlike fixed focal length lenses, zoom lenses require well-designed mechanical structures to provide the necessary relative movement of the lens unit in zooming. Appellant argues that because of the fundamental differences between zoom lenses and fixed focal length lenses, it cannot be assumed that a particular teaching regarding fixed focal length lenses are applicable to zoom lenses. Appellant argues that this is especially true when the zoom lenses are five-unit lenses designed to provide desired optical and physical characteristics, and that the fixed focal length lenses are two-unit, three-unit or four-unit lenses which are not

designed to have those characteristics. Appellant argues that there is no reason to conclude that one of ordinary skill in the art aware of the four-unit, three-unit or two-unit fixed focal length lenses in which middle length units or a rear lens unit are decentered for image stabilization would have found it obvious to decenter the second lens unit of a particular five-unit zoom lens in order to achieve effective image stabilization, while maintaining desired optical and physical characteristics. Appellant points out that the specification discloses that the Appellant has discovered that it is necessary to decenter only the second of the five lens units. Appellant points out that the prior art has not recognized that by decentering only the second of the five lens units in a zoom lens embodiment makes it possible to retain the compactness, excellent optical performance, large zoom ratio and other desirable characteristics of the five-unit construction and yet to provide highly effective image stabilization.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the

prior art suggested the desirability of the modification." ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). It is further established that "[s]uch a suggestion may come from the nature of the problem to be solved, leading inventors to look to references relating to possible solutions to that problem." ***Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.,*** 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), ***citing In re Rinehart,*** 531 F.2d 1048, 1054, 189 USPQ 143, 149 (CCPA 1976) (considering the problem to be solved in a determination of obviousness). The Federal Circuit reasons in ***Para-Ordnance Mfg. Inc. v. SGS Importers Int'l Inc.***, 73 F.3d 1085, 1088-89, 37 USPQ2d 1237, 1239-40 (Fed. Cir. 1995), ***cert. denied***, 519 U.S. 822 (1996), that for the determination of obviousness, the court must answer whether one of ordinary skill in the art who sets out to solve the problem and who had before him in his workshop the prior art, would have been reasonably expected to use the solution that is claimed by the Appellant. However, "[o]bviousness may not be established using hindsight or in view of the teachings or suggestions of

the inventor." ***Para-Ordnance Mfg.***, 73 F.3d at 1087, 37 USPQ2d at 1239, ***citing W. L. Gore***, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-313. In addition, our reviewing court requires the Patent and Trademark Office to make specific findings on a suggestion to combine prior art references. ***In re Dembiczak***, 175 F.3d 994, 1000-01, 50 USPQ2d 1614, 1617-19 (Fed. Cir. 1999).

Upon our review of Appellant's specification, we find that on page 6 of the specification, Appellant discloses that it is often the case with telephoto zoom lenses that the first lens unit is comprised of the largest lens unit and is actually moved toward the object side during focusing. Therefore, displacing the first lens unit in a direction orthogonal to the optical axis thereof to thereby provide a correcting optical system for vibration reduction results in the bulkiness of the holding mechanism and a driving mechanism, and that this is not preferable. Appellant discloses on page 7 of the specification that if a lens unit like the third lens unit or the fifth lens unit which is greatly moved along the optical axis during focal-length change is used as a correcting optical system for vibration

reduction, the mechanism of the lens unit will become complicated, and this is not preferable. Appellant also discloses that for the simplification of the mechanism of the whole five-lens system, displacement means for effecting vibration reduction is provided in the second lens unit. On page 20 of the specification, Appellant discloses that in each of the embodiments, the second lens unit G2 is designed to be movable along the direction substantially orthogonal to the optical axis. Thus, Appellant clearly has disclosed that his invention lies in the discovery of decentering only the second group of lenses in the five-group lens of a zoom lens system.

Turning to the references, we note that Ogawa discloses a zoom lens system having five separate lens units. However, we note that Ogawa is completely silent as to the problem of preventing image shake or any means for compensating for such image shake. Similarly, we note that Ishii discloses a zoom lens system having five separate lens units. However, Ishii is also silent to the problem of preventing image shake or disclosure to any means for preventing image shake.

For the teachings of preventing image shake, the Examiner has provided us with a variety of combinations using Yamazaki,

Kitagishi '602 and Maruyama. We note that none of these references are concerned with zoom lens systems. Furthermore, we note that none of the optical systems are concerned with a five separate lens units.

Yamazaki discloses a three-unit, fixed focal length telephoto lens that moves the middle lens unit in a direction perpendicular to the optical axis for image stabilization. Yamazaki does not teach a zoom lens and does not even disclose a five-unit lens.

Maruyama also does not teach a zoom lens and does not even teach a five-unit lens. Maruyama teaches a four-unit, fixed focal length telephoto lens. Maruyama teaches that the second or third lens unit of the four-unit lenses is decentered for image stabilization.

Kitagishi '602 discloses a two-unit, fixed focal length telephoto lens embodiment that moves the rear lens unit in a direction perpendicular to the optical axis for image stabilization and also discloses a three-unit fixed focal length telephoto lens that moves the middle lens unit in the direction perpendicular to the optical axis for image stabilization. We note that Kitagishi '602 discloses in

column 2, lines 60 through 63, that "though the embodiment is not illustrated in connection with the image magnification varying function, say the zoom lens, it is to be understood that the present invention is applicable also to zoom lenses." However, we note that Kitagishi does not teach how the application to zoom lenses would be done.

Upon our consideration of all the references as to what they teach and suggest to those skilled in the art, we find that the references suggest to those skilled in the art that at best one would be able to apply a vibration reduction device to a zoom lens system having five separate lens units. However, the teachings as a whole would only suggest to those skilled in the art that any one of these lens units may be decentered. The art would not suggest to those skilled in the art that it would be optimal to only decenter the second lens unit. As Appellant's disclosure supports, Appellant has discovered that it is only by decentering the second lens unit that one obtains the benefits as disclosed. Therefore, we find that the Examiner has failed to establish a ***prima facie*** case that one of ordinary skill in the art would have modified either the Ogawa five-unit zoom lens or the Ishii five-unit

zoom lens by applying a vibration reduction device for only moving the second lens unit in a direction across the optical axis. Furthermore, we note that the additional reference Kitagishi '868 applied to reject claim 7 does not provide this missing piece as well.

In view of the foregoing, we have not sustained the rejection of claims 1, 4, 7, 8 and 20 under 35 U.S.C. § 103. Accordingly, the Examiner's decision is reversed.

REVERSED

MICHAEL R. FLEMING Administrative Patent Judge	)	
JOSEPH F. RUGGIERO Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
LANCE LEONARD BARRY Administrative Patent Judge	)	

MRF:clm

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